April 1963

EMO

NATIONAL DIGEST

Survival of Public Under Fallout

Fire Services and Emergency Planning

Hurricane Carla

Survival Training for CMHC Employees

Manpower in a Nuclear Emergency

A NATO View

EMERGENCY MEASURES ORGANIZATION

THE EMO NATIONAL DIGEST

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SURVIVAL OF THE PUBLIC UNDER FALLOUT CONDITIONS

by E. W. LAVER

Mr. Laver formerly was a Survival Planning Officer with federal EMO and is now the Emergency Measures Departmental Planning Officer of the Department of Public Works.

THE FEDERAL GOVERNMENT has encouraged individuals and families to provide themselves with fallout shelters stocked with fourteen days of emergency supplies. This advice has been based upon the assessment that any large-scale nuclear attack on the North American continent will cause fallout to descend upon substantial portions of the populated areas of Canada. Even if Canada were not subjected to deliberate attack, there would be a risk of widespread fallout from attacks in the Northern United States. Random nuclear detonations from carriers intercepted over Canada or missiles going astray might create additional fallout hazards.

Estimates can be made of the fallout patterns which might occur under various types of nuclear attack. However no one could predict with any precision the weight of attack or conditions which would actually prevail at the time, particularly the wind directions. As a result it is not possible to say in advance that any area would be safe from fallout. Accordingly, all Canadians are urged to have some type of fallout protection.

Shelter and the means to survive in shelter are important survival measures. But they are only two parts of the total protection problem. The purpose of this article is to explore the other complementary aspects such as the Army Nuclear Detonation and Fallout Reporting System, the Municipal Radiological Defence Service, procedures for control of the public under fallout conditions and emergency broadcasting. It is the combination of all these arrangements which when operating will ensure the safety and ultimate survival of most Canadians under conditions of radioactive fallout.

The Canadian Army has developed a Nuclear Detonation and Fallout Reporting System (NDFRS). This system is comprised in part of nuclear detonation (NUDET) posts around each of the more likely target areas. Their task is to report the occurrence of explosions and the characteristics of the explosions. In addition, arrangements have been made to obtain similar information regarding any explosions which might occur in the Northern USA. By combining the information received about explosions with known meteorological data, it is possible to make a prediction of the areas in which fallout will likely come down. In addition, the NDFRS also will have some 2,000 fallout reporting posts (FRPs) arranged in a grid across Canada covering the more populated sections of the country. Operators located in these protected posts, provided with radiation detection equipment, will report actual readings of fallout. The compilation of reports coming from a large number of reporting posts will enable those responsible for providing information and advice to the population in affected areas to confirm or change the patterns first predicted.

The information provided by the NDFRS will be used to prepare a series of fallout warnings for broadcast over an emergency broadcasting system to be operated by the Canadian Broadcasting Corporation. The sequence of these broadcast warnings might be as follows: First, immediately following nuclear detonations, a prediction in general terms of the area which may be affected, giving the location of explosion and direction in which fallout will drift with the wind. Shortly after, a second warning would give estimated times at which fallout would start to come down in the closer communities downwind. Subsequent fallout warning messages every few minutes would include the predicted arrival times for fallout in communities further downwind and confirm the descent of fallout as it occurs. In between these warnings, the public would receive a series of broadcast instructions on how to make last minute preparations for survival under fallout conditions including ways to improvise and stock shelters.

The NDFRS will only provide enough information to determine the general areas of fallout and will not provide the detailed radiation readings which will be required so that more precise local instructions can be given to the residents in the more hazardous areas. To obtain this detailed information each municipality

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must have a radiological defence service. The type of organization required has been worked out and action is now being taken to provide radiac instruments and operational procedures for these municipal organizations. Thus the NDFRS, supplemented by the municipal radiological defence service, will provide the means through which the exact nature of the danger to the public from fallout radiation can be determined.

The radiation readings provided by these two systems, the NDFRS and the municipal radiological defence service, will be compiled on maps at municipal, zone and regional emergency government headquarters in a form suited to the needs of these headquarters for the conduct of survival operations and control of the public. Fallout areas will be divided into four control zones identified by the letters W, X, Y and Z. The purpose of this zoning is to provide the method whereby the public can be given guidance as to their movements. Because fallout radiation decays quickly people in some areas could be released from their fallout protection quickly. Others because of hazardous conditions might have to remain in their protected area for varying lengths of time.

A general definition of these areas follows:

(a) Zone W would cover the outer fringes of the fallout area where, after 48 hours, full freedom of movement would be permitted.

(b) Zone X would be a zone of comparatively light contamination where people would be advised to spend not more than four hours per day in the open for the first week and not more than 8 hours in the open for the succeeding three months.

(c) Zone Y would be an area where time spent outdoors would be restricted to two hours per day for the first 48 hours, and not more than 4 hours per day for the next three weeks. After two or three days there would be some sickness among the occupants of the zone.

(d) Zone Z is the area where because of high radiation intensities, it would be impossible to organize normal or even restricted communal life in the zone and remedial evacuation would have to be carried out.

Since any community could be in a Z zone following a nuclear attack, all municipalities must prepare interim remedial evacuation plans in peacetime. These plans would be comprised of the local transportation and traffic control arrangements. Every household should be made aware of these arrangements. However such local plans would not be implemented until the provincial or zonal authorities have determined which areas are free of fallout and the routes which could be used to reach them. This would not likely be before about 48 hours had elapsed following attack. At that time provincial authorities would arrange for instructions to be broadcast to the population in the Z zone regarding the assigned reception communities, remedial evacuation routes and timings for movement.

A significant problem will be that of communicating instructions to the people based upon information provided by the radiological defence systems. A true assessment of the actual radiation situation in all the W zones might not be available until about 48 hours after fallout starts to descend. During this period, everyone in fallout areas would be advised to stay in refuge or shelter. After 48 hours it would be possible to give the public more precise instructions including information on when they could leave shelter and how long they could remain in the open. Movement outside of shelters would be restricted in some areas for days and perhaps weeks. Thus for the first 48 hours in all fallout areas and subsequently in those where radiation intensities restrict movement, there would be no safe way for the authorities to deliver physically survival instructions to people in refuge or shelter. This problem is met by the emergency broadcasting system.

This system is now being developed so as to provide for broadcast transmitters protected from fallout and supplied with emergency power. These transmitters will be connected to studios located in emergency government headquarters. However, the effectiveness of this system will depend upon the ability of the public to receive emergency broadcast instructions. Although almost everyone has or can listen to a radio or television set, where these operate upon hydro-electric power, they could not be relied upon because of the strong possibility of widespread power failure. Therefore in the final analysis, survival of individuals and families may depend very largely on whether or not they have or can listen to a battery-operated radio.

Careful consideration has also been given to the desirability or otherwise of having the public provide themselves with radiation detection instruments so as to measure the radiation intensity. An examination of various types of self-reading dose-rate and total-dose instruments has lead to the conclusion that a good deal of technical knowledge and training is required in order to use these instruments, analyse the readings and determine the action to be taken. Even though it is possible to teach persons how to use the instruments and analyse the readings the proper action one could take would depend on knowing the readings at a great many locations. In other words a person could not do anything significantly useful even if he did know

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FIRE SERVICES AND EMERGENCY PLANNING

by J. F. Wallace, Assistant Director of Federal EMO.
Mr. Wallace also is Deputy Chairman of the Fire Advisory Council.

ALTHOUGH fire matters are traditionally and constitutionally the concern of provinces, the federal government, through the Emergency Measures Organization, has been encouraging the development of fire defence plans as part of the total national survival programme. The federal government's interest in this important aspect of emergency planning is not new since from the inception of civil defence planning in 1948 the problem of fires in wartime has always been recognized. The purpose of this article is to outline briefly the history of the federal interest in supporting fire defence measures.

When Major General F. F. Worthington was first appointed to be the Federal Civil Defence Coordinator in 1948, he realized very quickly that in any emergency the fire services would play a vital role. There was ample evidence that bombing attacks during the second world war created tremendous fire problems, and the atomic bombs which had been dropped on Hiroshima and Nagasaki had also resulted in major fire damage. Indeed, the nuclear bomb was recognized as being a potent fire raiser. In the early days of civil defence planning, General Worthington, cooperating with fire fighting officials throughout Canada, was able to develop interest in a 2½" fire hose coupling standardization programme. This programme was aimed at standardizing all fire hose couplings throughout Canada, and although the original aim was never achieved, the provinces now have provincial standardization while others are developing coordinated programmes within their provincial boundaries. These programmes are supported financially by the federal government.

Because only a few Canadian Fire Officers had ever had experience in dealing with wartime fires, it was decided in 1952 to conduct a series of Fire Forums in order to acquaint Canadian Fire Officials with the problems of mass fires in the event of nuclear war. Three forums were held in Toronto and the staff of the Ontario Fire Marshal in cooperation with many other agencies formed the instructional team. All provincial Fire Marshals and commissioners as well as over 100 fire officers from all major fire departments in Canada attended these forums.

In 1954 another Fire Forum was conducted at the Canadian Civil Defence College and the discussions centred around the new knowledge which had become available on megaton-range nuclear explosions. It was at this Forum that the fire officers recommended to General Worthington that he should consider the desirability of establishing a Fire Advisory Council. The Forum felt that because the federal government did not have any direct constitutional authority to direct fire services emergency planning, it was in the interests of all fire services throughout Canada to have some central group established which could concentrate its attention on emergency planning problems which had a particular interest to the fire services. This recommendation was adopted and in 1956 the Fire Advisory Council was established for the purpose of advising the federal civil defence authorities on "measures pertaining to firefighting, equipment, planning, training and operations, under thermonuclear attack or natural disaster".

As originally constituted the Council was comprised of six members—a representative of the association of Canadian Fire Marshals, a representative of the National Research Council (Fire Research Division), three representatives of municipal fire departments, and a secretary from the Canadian Civil Defence College. The first Chairman of the Council was the late W. J. Scott, O.B.E., Q.C., of Ontario. The Council was subsequently enlarged to include representation from the province of Quebec, the Office of the Dominion Fire Commissioner, the International Association of Fire Fighters, as well as a western provincial Fire Marshal. In all the Council was comprised of ten members.

The Council served mainly as a useful organization to keep the civil defence authorities aware of fire defence problems. It was instrumental in having Canada represented at the NATO Fire Working Party; in the

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conduct of fire forums at Arnprior and in the introduction of radiological defence training in some firefighters training programmes.

It will be recalled that in 1959, a major reorganization of civil defence took place at the federal level which, to a great degree, has been reflected in many reorganizations in the provinces. Additionally, in 1959, two Dominion/Provincial Conferences were held and all the provinces agreed to accept certain responsibilities for emergency measures planning and organization. Among these was an agreement by the provinces to accept responsibility for the—

> "organization of municipal and other firefighting services, and control over and direction of these services in wartime except in damaged or heavy fallout areas, where firefighting services would be under the direction of the Army as part of the re-entry operation".

Although no attempt was made to reorganize the Fire Advisory Council in 1959 or 1960, its proper place in the field of emergency measures planning was of some concern to the Federal Emergency Measures Organization, in that the provinces were basically responsible for firefighting matters. In this area, it was felt that the federal interest should be directed toward the support of provincial programmes of emergency planning, and the Council as then constituted could have little effect on provincial fire services planning.

Late in 1961, it was decided that the Council should be reorganized to include all Provincial Fire Marshals or Commissioners as well as representation from federal departments having an interest in fire matters. The purpose of the Council was to advise the Director of the Federal Emergency Measures Organization, who would be the Chairman of the Council, on fire matters as well as providing a forum for the exchange of views on fire planning matters. It was also decided that because EMO would be dealing with provincial officials, it would not be necessary to have municipal representation on a federal EMO body. This arrangement met with the approval of the respective Provincial Ministers responsible for emergency measures activities, as well as the various Provincial Ministers to whom the Fire Marshals or Commissioners normally report.

As a result of a request by the Director of Federal EMO, most provinces have now established parallel groups as Provincial Fire Advisory Councils, on which are represented the Chiefs of various municipalities and associations in the province. At the most recent meeting of the Fire Advisory Council, held in Ottawa on 27 November, 1962, it was reported that the provincial councils, where established, were proving to be a most satisfactory medium for the development of fire planning within the provinces.

Although the new Fire Advisory Council has met on only two occasions its activities have resulted in some concrete results such as,

(a) the established criteria for the purchase of fire equipment under the federal financial assistance programme.

(b) the inclusion of fire marshals/commissioners on provincial emergency planning committees.

(c) the passage of provincial legislation relating to the operational control of fire services during emergencies.

(d) the participation, under the financial assistance programme, in the distribution of fire prevention education material to schools.

(e) providing to provinces firefighting information from NATO.

From 1952 until the present the federal government has also assisted many provinces in the procurement of equipment for the training of fire auxiliaries or volunteers; as well as contributing substantially to other programmes which assist in making fire defence plans more effective. A summary of these follows:

(a) payment of all travelling expenses to fire service candidates attending special courses, forums, or conferences at the Canadian Civil Defence College.

(b) the issue, in 1952, of 33 fire training self propelled pumpers to the provinces.

(c) participating in the sharing of costs of fire hose coupling standardization programmes in British Columbia, Alberta and Ontario.

(d) since 1952, under the financial assistance programme, sharing in the costs of
fire pumpers, trailer pumps and portable pumps
fire hose
fire radio systems
fire instructional teams
waterproof protective clothing.

In the event of nuclear attack on Canada, the Canadian Army has been assigned the responsibility of controlling and directing the fire services when reentry operations are put into effect. As a result Army officers are working closely with both provincial and likely target area fire authorities in the development of fire fighting plans.

In summary, therefore, federal assistance to the development of emergency plans by the fire services is accomplished in four general ways; through the federal

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HURRICANE CARLA

Following is a second extract from a comprehensive report on the greatest hurricane in U.S.A. recorded coastal history. This extract covers aspects of Reception and Shelter. The first extract, published in the February, 1963, edition of the EMO National Digest, was on the subject of Evacuation.

Distances Achieved

THE CARLA EVACUEES traveled with a speed and to a distance which amazed reception experts. A Red Cross man noted, "They went right by the shelters we had prepared in 39 counties near the coast and were 300 miles away before we knew it. It never happened before." Towns 50 to 60 miles away were rapidly saturated; then 100; then 150; soon even Dallas, Texarkana, and cities in Arkansas, more than 350 miles away, began receiving people. Some Louisiana refugees reportedly went 400 miles or more to Oklahoma. Most travel was accomplished within 8 to 12 hours of departure.

No particular panic appeared to be involved. Many families were headed for homes of relatives or friends. Others desired private hotel or motel accommodations, which quickly filled to capacity over half of both States. A number merely felt that, having gone to the trouble of packing, they might as well achieve a comfortable distance, 300 miles being considered a pleasant drive for the Southwesterner on a weekend.

Private Accommodations

It was estimated that perhaps two-thirds of the evacuees found private accommodations. A Red Cross Chairman noted, "If about all the population of a city evacuates, the ARC assumes that care will be needed for one-third of them. We believe that the one-third theory applied during Carla about as normal." If so, some 80,000 Louisianians and over 400,000 Texans found private housing.

Commercial—Hotels and motels were filled as far away as Shreveport and Dallas. Few unusual problems were reported anywhere, with the exception of non-evacuated disaster areas such as Galveston, where last-minute non-paying guests arrived in numbers and camped in hotel lobbies.

Private Homes—A number of coastal residents were found to have "second homes" inland, and almost all had relatives or friends. In addition, local citizens without number opened their homes to strangers. From almost every local official came identical reports, "When our citizens reached a town, people would come up to them on the streets and ask them if they needed a place to stay. Utter strangers took them home from the street, opened their lovely homes to them. People were kind, wonderful; we don't know how to thank them." In Beaumont, "Some people leaving town left us the keys to their nice houses for the use of people who could not get further."

Public Shelters

When the evacuation began on Saturday, the ARC made contact with counties near the coast, and arranged for shelters to be opened in schools and other approved buildings. On the same day the first request went to 4th U.S. Army in San Antonio to begin shipping cots and blankets.

"Shelter" is used in the ARC sense of "emergency mass public accommodations" and does not relate to fallout shelter.

Within 2 days, the Red Cross had set up some 540 shelters in Texas and 116 in Louisiana—the largest operation of its kind in ARC history. Many others were known to have been opened briefly and never reported. A Louisiana official noted, "So far as we know not one person went without shelter if he sought it." At no time was there a strain on the total capacity. Many shelters were unfilled or only partly filled, and serious overcrowding was reported chiefly in the actual disaster area.

Types of Buildings Employed

Schools were the most-favored type of shelter, since they came complete with superintendent, cafeteria and cooks, nurses, janitors, and administrative help. The only disadvantage was that communities ordinarily desired to re-open schools as soon as possible, resulting in premature closing of some shelters.

Many other types of buildings were also employed successfully: auditoriums, churches, coliseums, theaters, YMCA residences, labor halls, American Legion posts. The chief requirement was for toilet and kitchen facilities plus some private space for administration, or isolation of the sick. Some differences of opinion were

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recorded concerning the suitability of very large buildings. In some places a noise problem and lack of privacy were cited, but elsewhere, as in Austin, one large auditorium was believed easier to staff and supply: "If services have to be spread out over town, they're harder to handle." In Austin, when offered space in private homes, people frequently preferred to stay with some 3,000 others in the auditorium and coliseum, where they felt in the center of things.

Excellent Shelter Behavior and Operation

Regardless of the type of management employed, some 99 out of 100 shelters enjoyed a considerable degree of success in operations. In Hardin County, the judge reported, "Approximately 12,000 people took shelter in this county. At 2 a.m. on Saturday, the Red Cross assumed the responsibility for feeding these people. Registered nurses were on duty at shelters in schools, churches, and at the county courthouse. No hysteria or panic was observed and those in shelters maintained a most cooperative attitude.

In Lufkin, a State employee reported: "At the county courthouse, work being done by the ARC with the help of department of public welfare seemed well in hand. The workers had set up a file of private homes. The phones were constantly ringing with calls of people offering their homes . . . there were more homes than refugees. As people came in they were registered and assigned to a home that would adequately house them. . . . Three churches alternated serving meals. Food was donated by commercial food companies and by individuals . . . The entire operation was run with utmost smoothness and completeness."

In Austin, where 3,000 were housed under ARC supervision, the CD director, reported, "We had no trouble. We had ARC, CD, police, sheriff's posse, rabbis, preachers, doctors, ambulances. We had free water from local dairies. A local barbecue house came out with a field kitchen and fed them military style."

In some places, shortage of ARC personnel was noted but operations were successful: "The ARC ran shelters; the city and county had nothing to do, except we had someone patrolling. Their greatest difficulty was that they didn't have enough workers to feed people—there were 3 to feed 700 people."

One city reported, "We had to run the 12 shelters with about 3,200 people; there was no ARC organization. We had them 3 nights and the behavior was good —no cutups, and one fight in all 12. There was only one complaint, on the third day; some wanted to play cards and some to sleep, so we had to put them to bed. We had a National Guard man at each, or a city policeman.

A police chief reported, "We ran the shelters; the ARC didn't arrive until after the storm." Another county added: "School cafeterias under county direction prepared food during the storm. After it was over the ARC moved in and took over feeding and did a wonderful job."

The Salvation Army was highly praised for its "tremendous cooperation". Eight centers were opened before the storm struck, in addition to many provided later. Twenty-two mobile canteens were put on the road, and kitchens operated during the storm in danger areas, where considerable equipment was lost.

In Houston, when no shelter could be found for occupants of an evacuated nurses home, Seventh-Day Adventist churches set up a shelter operation in a local gymnasium and provided nursing services.

Scarcity of Misconduct

In the great majority of these shelters, behavior was reported as uniformly good and orderly. An ARC State official noted that, "when you get 1,000 people together, there are always some excitable, agitated." A judge added, "you'll always find a few drinking or emotional problems". There always appeared to be at least one set of parents who could not restrain their children from running up and down aisles. A few engaged in activities which disturbed others, such as card games or loud radio-playing. An occasional belligerent drunk had to be carted off to jail.

On the other hand, it was noted that a real spirit of camaraderie, a family feeling, frequently developed. Services were interchanged, new friendships formed, a sense of community membership experienced. Evacuees felt spiritually strengthened upon witnessing the outpouring of spontaneous hospitality by host communities.

Behaviour Problems in Minority

In some 10 or 12 shelters out of the 650, serious difficulties were noted. These appeared directly related to two factors: (1) lack of skilled supervision, and (2) failure to evacuate disaster areas completely.

Effect of Distance from Disaster Area.—A parish official noted, "There appeared to be two categories of people; those who came out first, in boats, or cars, took their time, and needed no help; and those who waited until later and were totally dependent upon public aid." Shelters at some distance from disaster tended to be occupied by car-owning families, able to have paid for hotel space if they could have found it—also, by those sufficiently alert and well-informed to take early action upon the warning. Citizens of this type appeared to behave well even where skilled super-

vision was lacking, and to possess the initiative for self-organization if required.

Shelters in or very close to the disaster area frequently drew a majority of their occupants from those who refused evacuation, or lingered, or had to rely on public transportation. Schoolbuses and similar vehicles ordinarily could make a run of no more than 10 to 20 miles before being obliged to return for another load; neither could ambulances and rescue vehicles such as "ducks". Therefore, disaster-area shelters tended to have a higher concentration of low-income or low-literacy groups, and possibly also low-initiative. If some means could have been found to evacuate these areas forcibly, in sufficient time to transport people further inland, such concentration apparently could have been avoided.

Effect of Good Supervision.—County officials pointed out that it would be a mistake to assume that all low-income groups invariably became problems. Where good supervision existed from the beginning of shelter occupancy, examples were frequent in which these groups behaved as well as others. One little town of 5,600 housed 1,600 refugees during the storm. It lacked ARC supervision (except to pay bills); had no beds, stoves, or electric lights; and was able to offer only sandwiches and coffee or milk. Many occupants came from poor rural areas.

Authorities here reported, "It was almost unbelievable—the people who came were so cooperative. Just let them know and they'll respond. Several wanted to clean up the place when they left, and did, although the Red Cross would have hired someone." However, significantly, a CD worker was assigned to each shelter before anyone entered, and all persons were registered and supervised.

Unsupervised Behavior.—Where supervision was totally lacking, a rather horrifying example of behavioral possibilities occurred. In Houston, 200 persons obtained access during the night to a school not being used as a shelter. Unsupervised, they engaged in a riot in which 8 cases of soft drinks were broken in hallways, 107 windows broken, cafeteria walls spattered with modeling clay, obscene words written in the freshly painted halls, and the U.S. flag burned. Departing, they stole a fan, school supplies, shoes, a clock, and a desk. CD officials, when finally summoned, quelled the riot. Authorities believed this to be a case of mass vandalism, hardly typical of even unsupervised evacuee behavior.

Somewhat more typical unsupervised behavior was observed in one city in the immediate disaster area, in the interval before it was brought under control.

Around 5 p.m. Saturday, a Red Cross couple arrived to take charge and, with welfare department aid, began a struggle to achieve organization. A head count was made, revealing that there were already 3,000 people in 10 buildings. Registration was set up.

The buildings were a bedlam of complaints and confusion: "People were coming in trying to locate misplaced relatives. Complaints were handled such as not having toilet tissue . . . people turning their radios too loud . . . children running around disturbing people, smearing peanut butter on walls . . . people wanting to know where they could wash diapers . . . where they could warm the baby's bottle."

As darkness approached, supervisors discovered gambling, much drinking, purse-snatching, fights and knife-pulling. Police were called on some cases, and others handled by social workers, the complainers being cautioned not to start a panic by spreading the reports.

Food service also presented a problem. Prepared in a school kitchen, food was trucked from building to building, but when distribution was begun at one building, people from other buildings would flock there, under the impression they would not get food in their own buildings. Although there was plenty of food, it seemed impossible to convince people.

The health situation was also precarious. By good fortune, three nurses were located among the evacuees, and in a survey of shelters found mumps, trench mouth, impetigo, influenza, virus, diabetics without insulin, blood-poisoning, cardiac patients, many emotional problems, and one very late pregnancy. A doctor was called, and sickbays and isolation areas set up. As time went on, emotional problems became more predominant; nurses were kept busy administering sedatives, and several people became violent and had to be removed to the hospital.

It should be emphasized that all unfavorable reports came from less than a dozen of the 650 shelters, and therefore seemed an indication of the possible rather than the probable or typical in shelter behavior.

Information Problem in Reception Areas

Desire for News

Possibly the greatest nonmaterial need of evacuees, in and out of shelters, appeared to be news. Cameron Parish reported, after a shelter inspection, "Their main gripe seemed to be a lack of information as to what happened to the specific homes of families."

False News Report

News media, which had performed magnificently during the warning period, now, as a parish director noted, "really came up with some dillies."

The mayor of Freeport stated, "Erroneous news got out that Freeport and Brazosport were totally gone.

A Fort Worth paper took up a quarter section of the front page with a picture called "All that's left of Freeport." It showed one house above water. I went all over town and can't figure where that photographer found an angle that would show only one roof. There were hunderds of houses showing, and all our industry, even if standing in water. The picture caused great anguish to our citizens in reception areas. You can quote me."

A shelter manager recommended that "All commercial radio and TV stations should be ordered off the air. This was one of our greatest problems. Throughout the entire time that we were in this shelter, people were clustered around battery-operated radio sets, getting what they thought was the latest news. Early in this operation, we learned that radio and TV news reports were completely unreliable. These reports served only to keep the people in a highly agitated state of mind, keep them anxious and worried, and were a continual source of rumors. All news should be channeled through one reliable source and no news should be put on the air until verified."

A similar recommendation came from a worker in the Lufkin reception area. "In the future, I feel that one point should be emphasized to each refugee: Pay no attention to any radio or television announcement that is not signed or issued under the direction of the Civil Defense or the American Red Cross.

From Matagorda County it was reported, "Reporters called to ask about winds and the sheriff said the strongest was 90 miles per hour so far. They put it on the air that the sheriff said 115".

Many officials worried about the applicability of this problem to enemy attack. The mayor of Freeport said, "If our own reporters can put out such mistaken stories, that cause so much public grief or panic, what would be the result of an enemy fifth column giving out on the radio or the newspapers?"

An exactly opposite situation prevailed where the radio or TV station was located in the actual disaster area it was serving. A Galveston observer said, "As long as there was electric power in Galveston, people with TV sets knew exactly what was going on. In the past, violent rumors used to spread in storm situations, but not in this one. People found they should have battery sets, for when they finally lost lights and communications they were unnerved.

Principles of Successful Shelter Management

Had it not been for the few problem cases cited, there would have been few management principles to record. However, the few available comments almost all reinforced standard ARC principles of shelter management, and apparently would relate closely to the occupancy of fallout shelters.

Preparation of Shelterees.—A military observer in the Galveston area reported that lack of preparation of persons taking shelter was "pathetic"; few brought clothing, beddings, food, water, diapers, or medicine; "diabetics rushed from homes taking their parakeets but leaving their insulin in the refrigerators." A Jefferson County critique suggested educational programs on the need to take extra clothing, towels, toilet articles, medicines, baby food, bedding, and flashlights or candles.

Registration.—In post-disaster operations such as Audrey, where people arrived exhausted and in shock, it had been found necessary to give food and dry clothing before registering them. During Carla, where predisaster reception was the rule, confusion or disorder occurred in most cases where evacuees were permitted to get into a building without registration. Wherever more than one building in a town was used, it was found that copies of registration forms should be kept in a central office, to prevent those seeking relatives from calling or visiting shelters all over town.

Trained Supervisors.—A welfare department worker, after a 72-hour ordeal, suggested that all employees receive training: "We knew nothing about evacuation-center work when we went in and it doesn't seem we know too much about it now." Another, who actually performed in a superior manner, said: "I am not trained to handle a situation of this kind. I never had any instructions . . . however, every time I had a complaint about the services that were being offered at the shelter, I would suggest that in the future the people making the complaint take an active interest in either ARC or CD."

Police Protection.—No single instance of successful shelter operation was reported (although there may have been some) where a police officer or similar authority was not assigned or quickly available on call. Drinking, emotional displays, fights, or thefts seldom occurred when an officer was present. In the city of La Marque, overworked police could not remain at the shelter, so held an election for a "civil government", with a "mayor" and committee chiefs. After that, police merely had to go back once and speak sternly to six men who disliked the government.

Reports recommended that a security patrol be maintained in every shelter to keep order, enforce off-limits for administrative areas, and "give the people a feeling of confidence that they are protected."

Assignments to Occupants.—A State welfare department report noted, "There should be some trained

personnel to organize volunteers among the refugees for taking care of various duties such as cleanup, supply, food-preparing details. . . . The busier you can keep the people the less time they have to worry about their own situations, spread rumors, etc." Most shelters were found to contain people with useful skills which greatly reduced the load on overworked management personnel.

Food.—There was never an overall food shortage; however, in several cases in the immediate disaster area, evacuees were reportedly without food for as long as 24 hours. Elsewhere in disaster areas the menu was rather limited. Outside the disaster area, food was plentiful and poured in from hospitable citizens and agencies.

Investigation of complaints about food seldom produced much justification.

Water.—Only a few shelters reported problems with the supply of drinking water. Outside the disaster area, the supply was not affected; inside, most CD directors had been foresighted about obtaining water in dairy-tank trucks or other sterilized containers. Local dairy and brewing industries activated preplanned systems of furnishing water in their cartons or bottles. So effective were local industries that outside offers of help—even from as close as Dallas—were rejected. The only complaint was one from shocked citizens to the effect that children were drinking beer out of bottles.

Cots and Blankets.—In spite of the huge shipments of cots, few shelters reported receiving them before evacuees were leaving, if at all. Both CD and ARC officials believed the omission unimportant: We don't even try to get cots except for nurses' ward; people bring their own bedding. For the first 24 hours, cots are for the invalids and aged. Only a small percentage of people are not able to bunk down on the floor for the first 24 hours . . . nobody really goes to bed and to sleep, anyway."

Blankets were more needed than cots, and a shortage was frequently reported, but fortunately the weather was not cold.

Diapers.—A bachelor ARC official who conducted an otherwise blameless operation noted that he was caught short by the unexpected demand for diapers. "Operation Diaper" soon rivaled "Operation Bulldozer." The best solution appeared to be local purchase, although one report was received that local supplies were insufficient for the town's augmented population. One distraught official suggested stockpiling, along with other critical defense items.

Lights.—Adequate lighting was pronounced almost more important than food—the same conclusion that had been reached in Federal shelter-occupancy tests. Foresighted CD directors in several towns, including Houston, had prepositioned emergency generators at every shelter.

Sanitation and Preventive Medicine.—A medical observer reported that shelter managers were not familiar with emergency water treatment, emergency human-waste disposal, and other preventive measures. There were noted few provisions for control of communicable diseases, especially diarrhea and dysentery, although attempts were made at isolation. Even in a city such as Houston, dysentery occurred in some shelters. Observers felt it fortunate that most shelters closed after 3 days before an epidemic could occur.

Medical Care in Shelters.—Medical observers likewise noted that "shelter problems almost overwhelmed the medical staff," and that there was "little evidence that the medical support of shelters was coordinated with the hospitals." While nearby hospital staffs waited for business, one ARC nurse in a shelter might be on duty 72 hours without rest, and the ARC doctor "on call" continuously. In Galveston, teams from the University of Texas medical school were obtained for most shelters. In Louisiana, public health nurses were sometimes reported as assigned. Observers felt that "medical planning should be intimately coordinated" in a community.

In Galveston, ambulance cases being evacuated were taken to a hospital, which directed that they be sent on to a shelter. All stretcher cases were sent to the high school shelter, although it was decided too late that they should have been put in a school nearer the hospital. "When you wade in water to your armpits carrying a stretcher case to a hospital, and have them turn it away, you don't feel so good," said a volunteer rescue worker later.

Patients from nursing and rest homes also proved an unusual problem. Hospitals would seldom accept them, since they were not ill, and few shelters had facilities to care for the senile or convalescent.

Communications to Shelters.—Telephone communications to shelters were reported as inadequate, since all lines might be jammed by occupants making calls. Managers usually tried to reserve a private phone in an office to receive incoming calls, although through poor advance understanding with building owners private offices had sometimes been left locked. In Beaumont and several other cities, radio communication to each shelter was provided by the CD office, and proved invaluable in obtaining supplies, medical aid, police, or other needs. Reports recommended better advance understanding with building owners about communications (as well as about humbler needs such as the location of mops, brooms, and toilet paper).

Religious Support.—The mayor of Houston and numerous others noted a need for religious services and ministerial help in shelters. While advance provision for this had not always been made, it was usually obtainable where communications were still open.

Entertainment.—A similar need was found for entertainment or other distractions to keep people's minds off their problems.

News.—To meet the need for reliable news, the Jefferson County critique recommended: "Devise some way to get information on the situation at home disseminated to evacuees in shelters." LaMarque police suggested that all persons from one city go to one reception area, so that the security patrol remaining at home might reach them by one call or message. The Brazoria County judge planned to call a local meeting to discuss ways of improvement. Some felt that the news media could solve the problem, but others noted that people wanted official block-by-block or precinct-by-precinct advice on specific towns, large and small, and doubted that news media would be interested in such undramatic fodder with its necessity for plodding prior verification.

Other Services.—Reports recommended miscellaneous other services; a central information desk; a nursery to keep children under control; trained workers circulating to detect problems in their beginnings; orderly distribution system to prevent scrambles; identification so that supervisors would be let through roadblocks to their posts; schedules with set times for lights-out; definite building assignments months in advance.

Control of Sale of Alcohol in Reception Areas.—Red Cross rules customarily forbade taking alcohol into shelters. In at least two Texas reception counties, authorities went further and banned sale anywhere in the county. In Hardin County, the county judge closed all package stores and beer retailers from September 9-12. He also precluded wholesalers from making delivery. Although the judge was not sure of his authority to do this, he was certain of the salutary results. During the 4-day abstinence period, only three people were put in jail in spite of the presence of 12,000 refugees in a county of 24,600 population. The judge stated that during a normal 4-day term at least 15 or 20 people would have enjoyed jail privileges.

Application to Enemy Attack Situations

There was evidence that the capacity of most reception areas had not been severely tested. Even in some coastal areas, shelters stood empty or were not even opened. The Jefferson County judge received calls from "all over east Texas" offering more space. In no reported case was the supply of freely volunteered private homes exhausted.

Opinions varied as to whether the load of enemy-attack evacuation could be supported with equal success. A State ARC official said, "In an enemy-attack situation we would not have been able to use Houston for reception. I doubt if smaller cities could accommodate the load—some people might have to camp out." On the other hand, other observers felt that Texas could accommodate its entire big-city population by forced billeting in private homes alone, without the need of any public shelters.

A county official recommended, "It should be possible to make a State survey of how many people would saturate each town. Then the State ought to have central control and routing points and cut them off when capacity is reached."

An ARC State official noted, "If this had been enemy attack with strategic (advance) evacuation, reception would have been the same—but if we had had a large number of casualties (remedial evacuation after an attack) it would have made a huge load."

Success of Reception Operation

In spite of problems encountered in a few non-evacuated areas, the reception operation was generally rated an unqualified success. Although less dramatic than the evacuation, it was felt by observers to be equally amazing and equally significant for the nation's planning.

On less than a day's notice, reception areas had absorbed over half a million people and successfully cared for them. The resiliency and resourcefulness of American communities came in for praise from thousands.

In the entire operation, no one had lacked food or shelter for long. There had been no major injuries or serious epidemics even with inexpert management, and no deaths directly attributable to the huge operation. Although deaths in shelters from natural causes were counted in Carla's statistics, there was no evidence that they were greater than the normal percentage in the numbers involved.

Expressions of gratitude from evacuees overflowed newspaper columns: "It was a wonderful experience for us." "We will never forget your city's hospitality." "We were overwhelmed by the kindness and thoughtfulness of ordinary people toward utter strangers."

Somewhat more surprising was the warm reaction of reception cities. Pleased with themselves, they noted "a marvelous spirit—everyone wanted to help." "I don't see how we could have done better if we'd planned it for a long time."

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SURVIVAL TRAINING FOR CMHC EMPLOYEES

R. H. Sprague, Emergency Planning Officer, for Central Mortgage and Housing Corporation, discusses the training of employees to meet natural and nuclear disasters.

Central Mortgage and Housing Corporation is a Federal Crown Corporation incorporated by Act of Parliament in December, 1945 to administer the National Housing Acts. The operations of the Corporation, as the housing authority for the Federal Government, extend across Canada and involve some 2,000 employees in 53 offices. About one-third of the employees are located in Ottawa at the Head Office; another third in the three largest cities—Montreal, Toronto and Vancouver and the remaining third scattered in other urban centres throughout the country.

Emergency Role of CMHC

The Corporation has been designated as a Group II Emergency Department and, as such, would participate in early support of Group I Departments during the Recovery Period following a nuclear attack. Emergency Planning has become a part of the normal functions of CHMC in which the Corporation has a responsibility to make its employees available for survival operations; to assist in the essential functions of Government and to implement plans for the reactivation of the Corporation. To develop these plans, a full time Emergency Planning Officer has been appointed. He is assisted by a part-time Emergency Planning Officer in each field office.

Survival Training Plan

To equip its employees for survival operations, the Corporation has developed plans for their survival training, based on the premise that every employee should be made aware of the problem of survival and the appropriate plans of action, and should be given the opportunity to participate in the implementation of those plans. A well-trained nucleus of volunteers instructed in survival methods is needed to ensure that evacuation plans may be implemented. The final objective is considered to be the participation of every employee in some aspect of survival operations.

Survival Training Programmes

Two major complementary survival programmes were developed as part of the Emergency Plan. The first, *Personal Survival*, is designed to instruct employees in emergency measures to be taken for the survival of the individual and his family. The second, *Civil Defence*, is a phased programme to organize and train a nucleus of volunteers to handle day-to-day emergencies, such as fire; with the ultimate goal being to prepare for a nuclear emergency. This goal would be contingent on the development of Civil Defence and Emergency Evacuation Measures by local municipalities, where CMHC offices were located.

(1) *Personal Survival Programme*

The Personal Survival Programme was launched in three simultaneous stages—(a) distribution of survival literature; (b) a survival lecture programme; and (c) survival instruction in First Aid, on a voluntary basis. At the end of the first year of operation, the programme was reviewed—modified to meet changing conditions—and then placed on a continuing basis.

(a) *Distribution of Survival Literature*

In October, 1961, as a first step, a basic kit of emergency literature consisting of *"Eleven Steps to Survival"*, *"Your Emergency Pack"* and *"Welfare Tips for Survival"* was sent to the home of each employee. A complete supply of Emergency Literature was sent to each office in order to have literature available to meet employees' requests. In early 1963, a further supply was issued to each office with instructions to display this literature from time to time on Employee Notice Boards. The concept behind this programme was to keep a constant reminder before the employees to make them aware of the necessity for survival planning.

(b) *Survival Lecture Programme*

The development of a Lecture Programme was more difficult, because the number of staff in an office may be anywhere from six to over six hundred, while work loads vary from a peak in the summer construction season to a lower level in the winter. To meet these conditions, and particularly to develop a flexible programme adaptable to any situation, a *Lecture Guide* was produced outlining a suggested speaker's schedule,

lecture note schedule and film schedule. This *Lecture Guide* was supplemented by a set of printed Lecture Notes on emergency topics and a *Survival Film Commentary* on eight selected films. The local Emergency Planning Officer in each office was requested to adapt the lecture programme to fit local conditions and the Regional Information Officer was requested to act as the liaison officer in arranging speakers and films for those officers desiring to use such media.

The general theme of the lecture series was the positive message "*You can survive provided that you understand the effects of nuclear Blasts and fallout and know what action you can take to protect yourself*". This programme has been placed upon a continuing basis with each office arranging survival lectures to meet its own requirements. To date, more than half of the offices have completed a lecture series.

(c) *Survival Instruction*

Survival Instruction also had to be organized during the winter season. A beginner's course in the *"Fundamentals of First Aid"*, provided by the Department of National Health and Welfare, was offered to all employees with further courses to be arranged for the successful candidates of the first course. More than 400 employees in 23 offices registered for First Aid instruction and of those 200 have graduated to date. Courses are conducted during working hours or in the evening, depending on local circumstances. First Aid instruction has mainly been provided by Saint John's Ambulance Brigade personnel, except in Ottawa where the Corporation provided its own First Aid Instructor.

Graduates of the *"Fundamentals Course"* were then offered courses in advanced First Aid to further the development of *First Aid Parties* as an adjunct to the Building Warden Organization. At Head Office, Home Nursing instruction has been organized by the Nurse in the Clinic for female employees. A continuing programme is contemplated, including refresher courses and simulated casualty exercises, as part of the training of the Building Warden Groups.

(2) *Civil Defence*

In the larger offices of the Corporation, a Building Warden Organization has existed for several years to assist in the evacuation of employees from the buildings in case of fire. Our Civil Defence Plan has been developed around the concept of the utilization of this organization for all emergency purposes. All offices have been directed to establish a Building Warden Organization and Evacuation Plans. Organizational and Training Programmes were set up on a phased basis:

(1) To instruct and train the Building Wardens to deal with day-to-day emergencies. For example, Fire Drills are held to test the Evacuation Plan and to give the employees experience. The average time to clear a building for Fire Drill purposes has been under three minutes.

(2) To organize First Aid Teams from the graduates of the First Aid Courses to become an adjunct of the Building Warden Organization. This phase is now being carried out.

(3) Future phases may see the formation of rescue parties, fire parties, police parties, welfare groups and shelter managers—depending upon the local emergency plan of the municipality and the future plans of the federal government.

Evacuation Plans and Warning Systems are now being developed to prepare employees for the steps to be taken upon the sounding of the sirens announcing a *National Alert* or *Take Cover*. The Building Warden Organization will receive special instruction on the procedures to be followed to ensure that all employees evacuate office buildings without chaos and then *go home* or *take cover* as time warrants. Such instruction is being developed in conjunction with local municipal Emergency Plans. Building Warden Organizations and Evacuation Plans have been established in 27 offices while other offices are in the process of organizing such procedures. A series of articles, based on a *Family Survival Plan*, are being written for distribution through the employees' Newsletter so that each one may be personally informed about the general *Plan*.

Orientation Programme

In addition to the Survival Training Programme for CMHC employees, Emergency Planning Officers and staff assigned to emergency posts (whether to Group I departments or CMHC Relocation Sites) are sent on Orientation and Staff Training Courses offered by the Emergency Measures Organization. Other staff, assigned to specialized tasks, such as First Aid Instructors or Instructors in Shielding Analysis Techniques are provided with special technical emergency training and then utilized in their specialized skill to train other employees.

Evaluation of the Programmes

An evaluation of CMHC Survival Programmes indicates that the interest of employees in survival

matters ranges from active interest during periods of extreme international tensions, such as the Berlin and Cuban Crises, to complete indifference during more peaceful interludes. Reaction also varies locally in direct relation to the action or lack of action of municipalities in developing emergency plans. Our experience has indicated general interest in CMHC Survival Programmes in those offices located in municipalities which have an active emergency operation as against little interest in offices where the municipality has no Emergency Plan.

Future Programme

It has become quite evident that the focus of the Survival Programme must be re-oriented to stimulate as well as to inform CMHC employees on survival matters. With this purpose in mind, future programmes are being designed to make employees more aware of the necessity for preparedness by keeping the subject of survival continually before them. It is hoped that, through these means, our employees will know what steps to take to meet any emergency, including a nuclear one. ▲

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Survival of the Public Under Fallout Conditions *(conclusion)*

what the radiation intensities were at his location. Accordingly emphasis is being placed upon organizing, training and equipping the radiological defence systems mentioned above for public protection, and the general public is not being encouraged to purchase self-reading radiation detection instruments at this time. Study is however being given to the possibility of recommending to the public a simple, reliable non-self-reading dosimeter which would record total dose. Such an instrument could be read on special "readers" by the appropriate authorities at any time and used as a device to safeguard individuals who might be required to be in hazardous areas following an attack.

The government arrangements for control of the public under fallout conditions mentioned above are in various stages of development. At the present time, the NDFRS and CBC provide some competence for the broadcast of general warnings and instructions to the public. Plans are now being made to develop the organization of the Municipal Radiological Defence Service. Further improvement in the emergency broadcast capability and development of detailed procedures for control of the public under fallout conditions are now in hand. Radiation detection instruments are being delivered to provinces and orders are being placed for additional equipment.

In conclusion the point must be made that all the foregoing government arrangements for the survival of the public under fallout conditions will be successful only if the people themselves have made adequate preparations. In summary, the vital public preparations are to know the facts about fallout, have shelter and supplies, and have a battery-radio to receive emergency broadcast instructions. ▲

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Fire Services and Emergency Planning *(conclusion)*

financial assistance programme; through the Fire Advisory Council; by means of the assistance provided by officers of the Canadian Army; through attendance at special conferences, forums or courses conducted at the Canadian Civil Defence College. These are only some of the means toward the end objective. The development of effective plans is dependent on the direction and advice provided by the Fire Commissioners to municipal fire services. In the final analysis the effectiveness of any of these plans will be contingent upon the ability of organized fire departments to carry out their assignments. There is no reason to doubt that the fire services will be able to meet the tremendous responsibilities which have now fallen on their shoulders. After all, in peacetime, they are our first line of defence against one of the major hazards of peacetime living. ▲

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Hurricane Carla *(conclusion)*

The mayor of Crockett wrote, "While it may seem that we were giving and you receiving, our people were actually experiencing a blessing in disguise that shall always be remembered. We now know the true meaning of 'it is more blessed to give than receive.' We are glad that you came our way . . . a warm welcome always awaits you again." ▲

Copies of the complete report may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. (55 cents U.S.) The report is titled HURRICANE CARLA.

MANPOWER IN A NUCLEAR EMERGENCY

This article was prepared by the planning staffs of the Department of Labour and the Unemployment Insurance Commission, under the guidance of the Emergency Manpower Planning Committee.

CIVIL emergency planning has, as a primary objective, the survival of the nation and its way of life after a nuclear attack. Inherent in this planning is the objective of making the most effective use of the resources which would remain after an attack. This hinges largely on the use that would be made of our most important resource, that of manpower.

The Federal Minister of Labour has been charged with the responsibility of preparing plans with respect to the effective use of manpower and, to discharge this responsibility, has delegated to the Department of Labour and the Unemployment Insurance Commission, the responsibility of preparing the necessary detailed plans.

Establishment of Authority

The basic plan calls for the establishment of a National Emergency Manpower Authority, the membership of which would be drawn from among the Department of Labour, the U.I.C., other federal departments and agencies, and elsewhere at the discretion of the Minister. This Authority, better known by its abbreviated title of NEMA, would form part of the central emergency government and would have complete control of the recruitment, direction, reallocation, and movement of all civilian manpower with the exception of certain specified categories. The powers, duties and functions of NEMA have been set out as follows:

(a) Formulate general emergency manpower policies based on an assessment of manpower needs and resources, and recommend any necessary legislation relating thereto;

(b) Identify and establish essential activities and critical occupations as a basis of manpower priorities; and

(c) Maintain liaison with other elements and agencies of emergency government on matters relative to manpower mobilization and utilization.

Within this broad framework and in keeping with the principle that the wartime functions of government departments should be, so far as practicable, extensions of their peacetime functions, the Department and the Commission have been given emergency assignments in their normal areas of responsibility as follows:

Department of Labour

The Department of Labour would assist NEMA by:

(a) Analysing national manpower needs and resources;

(b) Making recommendations to the Authority concerning changes necessary in the priorities of essential activities and critical occupations;

(c) Controlling labour-management relations, conditions of employment and wages.

Unemployment Insurance Commission

The Unemployment Insurance Commission would assist the Authority by:

1. (a) Acting as principal field representative of NEMA;
   (b) Preparing and disseminating directives and instructions for the control and allocation of manpower;
   (c) Applying and enforcing manpower priorities and controls;
   (d) Providing local labour market information and analysis.
2. Continuation or otherwise of the unemployment insurance benefit programme.

Since the Authority would come into being with the declaration of a state of national emergency, it was necessary to establish a peacetime planning body. To this end, the Emergency Manpower Planning Committee (EMPC) was established, comprised of equal representation from the Department of Labour and the U.I.C. To ensure continuity between planning and operations, certain persons who will form part of the NEMA at Federal Emergency Headquarters have been included in its membership.

The EMPC provides the forum through which planning and organizational problems are identified and

resolved. Its terms of reference, briefly stated, are as follows:

(*a*) Development of a National Plan for the prompt and effective use of manpower in a national emergency.

(b) Formulation of emergency manpower policies based on needs and resources, supported by the required legislation.

(c) Establishment of essential activities and critical occupations as a basis for manpower priorities.

(d) Liaison with government departments, employers, unions, etc.

(e) Review and co-ordination of planning in the Department of Labour and the U.I.C., so that

(i) well-developed plans of action will be formulated to deal with emergency manpower problems;

(ii) such action may be in accord with EMO and other planning entities;

(iii) no difficulty would be experienced in co-ordinating the efforts of both agencies in NEMA.

In addition to the foregoing terms of reference for the Emergency Manpower Planning Committee, the Department of Labour and the U.I.C. have precise areas of planning in keeping with their peacetime responsibilities. These are, in the main, the areas in which they would, in an emergency, assist NEMA as set out above. They need not be repeated here.

Priorities

It will be readily apparent that to attain maximum efficiency in utilizing available manpower resources, it will be necessary to establish priorities. The retention of manpower by, or transfer of manpower to, an activity will depend upon the degree of priority established for it in peacetime after consultation with departments and agencies concerned. Priorities will have to be sufficiently flexible to be capable of rapid adjustment in light of changes in the emergency situation.

Essential Activities

Before priorities can be established, those activities which will be considered essential must be identified according to certain basic criteria. These are:

(a) An essential activity is one that is essential to support of the war effort and the survival of the individual and the nation.

(b) It may require application of allocation policies to be assured of an adequate supply of manpower.

There are two main categories of essential activities. They are

(1) those allied to survival operations, and

(2) those allied to recovery.

Activities essential to survival include among others, continuity of government, rescue, first aid and evacuation of survivors, decontamination, firefighting, radiation monitoring, traffic control, damage and casualty assessment, emergency health and welfare services, the provision of basic necessities, and the maintenance and repair of public utilities.

The relative importance of many of the activities which must, for planning purposes, be considered essential would have to be reviewed in the light of actual conditions during the immediate post-attack period.

Essential activities during the recovery phase will be those that contribute to the restoration of the economy and its productive capacity. Activities connected with the production of food, construction materials, construction and repair of housing and industrial plants, clothing, etc., will rise on the priority scale as the need for basic survival operations decreases.

Critical Occupations

After the identification of essential activities, the next step is to identify the critical occupations that are required for the continuance of these activities.

A critical occupation is defined as one which:

(a) is indispensable to an essential activity;

(b) requires skill to the degree that cannot be quickly replaced;

(c) needs to be controlled because of rivalling demands of users.

Prior to an emergency, workers in critical occupations might be found in either essential or non-essential activities. Those in essential activities would be compulsorily retained in those activities, while those employed in non-essential activities would be subject to transfer to projects of a higher priority.

Allocation and Control

Three basic principles have been established for the control and allocation of manpower. These are:

(a) Some departments and agencies of government would during a state of emergency, require additional staff very quickly. To these departments and agencies there must be an advance allocation of key manpower so that they may function effectively at the outset of the emergency.

(b) Those employed in essential activities will have to be compulsorily retained in their employment for so long as is deemed necessary.
(c) Demands for manpower for essential activities will be met from any surpluses that may exist, by curtailing non-essential activities and by interzonal or regional transfer.

These principles cannot possibly envisage all of the problems that might be encountered in times of a nuclear emergency.

The vast geographical separation of regions and local areas in Canada would present problems in an emergency that could only be resolved by on-the-spot decisions of the field staff concerned. These decisions would be based on the intimate knowledge possessed by NES staff of national, regional, zonal and local manpower resources. Allocation would also be affected by nuclear weapon effects that might obtain in any given area. It is assumed, however, that the experience gained by staff at all levels in meeting peacetime emergency situations would stand them in good stead when called upon to relate this experience to the difficulties inherent in the allocation of manpower during a nuclear emergency. The knowledge of local labour market conditions in terms of plant, employees, skills, and related industrial activity within their respective communities would enable NES personnel quickly to gauge remaining manpower resources and weigh them against applicable priorities, not only within their own local office areas but also as they might be related to zonal and regional demands. Field experience of course would be augmented, where possible, by resource data available at the national level.

Decentralised Administration

It must be recognized that the onset of hostilities might cause the isolation of some areas and a breakdown in communications facilities. Further, priorities for some activities would no doubt differ from place to place depending on local conditions. For this reason, the administration of the manpower authority is planned so that it could, when necessary, be conducted on a decentralised basis in accordance with basic policies.

Other Aspects of Manpower Planning

To be effective, manpower plans must have the wholehearted cooperation of both labour and management. In past emergencies this has been given unstintingly and, should a nuclear exchange occur, it is anticipated that it will be repeated.

Regulations governing wage stabilization, conditions of work, employees' rights and other matters in the field of Industrial Relations would be developed in the light of the existing situation and in keeping with overall government policy concerning finance, prices, manpower and monetary controls. These would be administered by officers of the federal and provincial Departments of Labour in the field.

Progress

To carry out the detailed planning necessary there are, in both the Department of Labour and the Unemployment Insurance Commission, full-time planning officers at the national level. These officers are supported by administrative and secretarial assistants. In the case of U.I.C., which has the responsibility of being the principal field representative of the NEMA, Regional Co-ordinators of Emergency Planning are operating on a full-time basis in each of the five U.I.C. Regions. In peacetime, these comprise a complex of some two hundred and fifty offices from coast to coast. In addition, an emergency organization has been selected and trained at national, regional, zonal and local levels to augment these offices, based on the ten-region concept which has been set out by the Emergency Measures Organization.

A basic operational plan for the control, allocation and direction of manpower during and following a nuclear emergency has been developed and a study is being made of all statistical data available on manpower resources. Continuing consultation is being held with the various agencies and departments of government which will require quantities of manpower in an emergency, with the objective of determining the demand that might ensue in terms of numbers, occupations, locations, etc. The movement of manpower from undamaged to stricken areas would involve, on a continuing basis, consultation with suppliers and other users of transport facilities. Demands by the Army for re-entry, rescue and lifesaving operations must also be considered in planning.

Draft legislation, together with the attendant orders, has been prepared, and provisional directives and instructions relating to manpower services, staff duties and operating procedures have been distributed to all levels of U.I.C. operational staff. Consideration is being given to the preparation of draft orders that would be required to instruct the public during an emergency.

Studies are underway of the nature and extent of manpower information that should be prepared and ready for dissemination at all levels. Liaison has been established with federal, provincial and municipal departments having an emergency function and responsibility. This is particularly true of the Emergency

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A NATO VIEW . . . . . .

THE IMPORTANCE OF CIVIL EMERGENCY PLANNING

The following is a condensation of a North Atlantic Treaty Organization pamphlet.

ARTICLE 3 of the North Atlantic Treaty lays down that: "In order effectively to achieve the objectives of the Treaty, the Parties, separately and jointly, by means of continuous and effective self-help and mutual aid, will maintain and develop their individual and collective capacity to resist armed attack".

Consequently the members of the Alliance are obliged to maintain and develop their civil potential in peacetime, and to prepare for the particular situations arising in time of war.

Civil Emergency Planning, as far as NATO is concerned, covers the measures which are necessary to enable each NATO country to resist any kind of attack, including a thermonuclear attack.

Emergency Plans

The general co-ordination of Civil Emergency Planning is undertaken in NATO by the Senior Civil Emergency Planning Committee, which was set up at the end of 1955.

The Chairman of this Senior Committee is the Secretary General of NATO; the members are the national representatives who are responsible for Civil Emergency Planning in their own countries. On the International Staff/Secretariat side there is a Civil Emergency Planning Office which also includes technical advisers for civil defence, civil aviation, inland transport, communications, medical questions and refugees. A number of specialised boards and committees, such as the Civil Defence Committee, the Board for Inland Surface Transport, the Petroleum Planning Committee, etc., receive guidance from the Senior Committee, on which they depend, with regard to the specific subjects of international planning which they should study. Each year the committees report progress to the Senior Committee.

To co-ordinate the work of committees with regard to policy matters of general concern, and to prepare studies on specific subjects such as the organization of International Civil Wartime Agencies for transport and supplies, and Refugees, the Senior Committee has set up its own Co-ordinating Committee. This Committee works in very close collaboration with the International Staff. The Chairman is the Head of the NATO Civil Emergency Planning Office; the members are drawn from the national Delegations to NATO.

In order to guide the work of Civil Emergency Planning, the Senior Committee has laid down certain planning assumptions. This means that each of the committees has been given an appreciation of the scale of attack which can be expected, of the most important and most likely targets, and of the general effects which modern weapons may be expected to have.

The Senior Committee has also laid down for each committee what it regards as the most important objectives, i.e. the arrangements which should be considered first and which are of the greatest importance during the survival period.

Among the fundamental assumptions on which all Civil Emergency Planning is based, the first and most important is that the critical period of any future thermo-nuclear war will be the first month, of which the first three or four days may be of special importance.

If the military and home fronts can, as a result of their preparations, successfully get through this period, which is known as the "survival period", it is believed that at least half the battle will be won. The Senior Committee and its committees are therefore concentrating on the minimum requirements which would enable the civil population to survive this short period at the beginning of a war, during which thermo-nuclear weapons would be used in their fullest strength.

The greatest emphasis is placed on saving human lives and on making whatever provision may be required to enable the population to carry on, even though conditions may be extremely difficult.

Another important problem concerns the question of warning. It is possible that there might be a short strategic warning period during which certain emergency measures could be executed. Such a period cannot, however, be counted on.

This period is of special significance because certain measures, such as the evacuation of the population, cannot be successfully carried out either under an immediate threat of attack, or while an attack is in progress.

One of the tasks on which NATO is engaged at present, by means of a working group, is to arrange an "international fallout warning". An international fall-

out warning implies very close international co-operation such as an exchange of meteorological information, particularly regarding upper winds to heights of 80,000 to 100,000 feet.

Survival Requirements

The aim of Civil Emergency Planning is to reduce the effects of enemy attacks on the civilian population, and its main object is the saving of human lives and the limitation of damage. The main survival requirements can be set out under a number of broad headings:

(1) Maintenance of Government Control

It is clearly of vital importance that control should be maintained at all levels of government, central and local, during the survival period. If this is to be done, there must obviously be adequate wartime legislation.

It is also essential that arrangements should be made in which central and local governments would have protected war headquarters located away from the main target areas. Drastic measures may have to be taken and some form of Cabinet Government would probably have to be instituted because it may be impossible for Parliaments to meet and to carry on business as they do in peacetime. It is especially important to ensure that arrangements are made for all responsible posts to be filled by persons of the necessary standing.

The importance of this particular aspect of emergency planning has been examined by a working group, at the instance of the Senior Committee.

(2) Survival of the Population

An overriding importance is attached to the survival of the population. It is hoped that this can be accomplished either by removing persons from probable target areas or providing them with shelters.

The cost of building shelters to give adequate protection against all the effects of a thermo-nuclear explosion within a radius of about 5 miles is very high indeed and most, though not all, members of the Alliance have so far not attempted to make any such provision. On the other hand, general agreement that provision should be made in any case for shelter against fallout has been reached. In most countries studies are being made of measures which can be applied to different types of dwellings, commercial buildings, etc., and there is a special working party which is responsible for making technical recommendations to the Civil Defence Committee on all aspects of this problem. It is generally accepted that a balanced combination of evacuation or dispersal and of shelters provides the broad answer to the problem of survival.

The general policy, therefore, is to try and evacuate or disperse people from the centre of probable target areas and to provide shelters for the remainder. Evacuation and dispersal plans are being worked out by most countries in NATO and a number of practical tests have already been held, both in the United States and Canada, of dispersal arrangements. With regard to shelters, the process is much slower because of the cost, but plans are being carefully studied.

(3) Civil Defence

A well-organized civil defence is an essential part of survival since its principal task is saving human lives and limiting damages.

A number of NATO member countries have established civil defence colleges in order to train volunteers who would form the cadres for future civil defence teams. Their training includes theoretical courses given by lecturers and practical field-work arranged by instructors.

In most NATO countries in Europe civil defence is divided into two echelons, the first consisting of volunteers responsible for local defence, and the second comprising mobile columns. On the North American Continent there are also local volunteers, but mobile columns do not exist. They are replaced by what are called mutual support arrangements, organized from volunteers in areas surrounding probable targets.

In Europe one country (Norway) has total conscription for civil defence, all persons between the ages of 45 and 55 having to put in a certain number of hours a year for ten years—the younger age group supplies the mobile columns and the older the local defence personnel.

In the Netherlands, the mobile columns are provided by the military forces, the personnel being found by national conscription. This country has also introduced recently a form of conscription for the local civil defence forces, which is used to fill gaps where it has proved impossible to attract an adequate number of volunteers. In the United Kingdom, the second echelon is now being found by giving special training to units of the territorial army. The original scheme of the mobile defence corps provided by the army with conscripted personnel has been wound up with the decision to abandon conscription.

France has just promulgated a decree which will enable the government to allocate personnel aged 37 or over for Civil Defence duties. Provision is also made to conscript women for this work.

Mobile columns are equipped and trained for rescue, fire-fighting and first-aid, including ambulances. In some countries they are also equipped for debris clearance, bridge-building and emergency feeding.

However efficient the civil defence and other services may be, they will probably never be sufficient to meet the enormous problems with which they may be faced. Particular importance is therefore attached to self-help on the part of the civil population. This means, first of all, educating the population in what it may have to face and how it can help itself.

Self-help means the acquiring of some elementary knowledge about first-aid, home nursing, fire-fighting and emergency cooking and knowing what sort of reserves of food and water to have in the house.

Civil defence is dealt with in NATO by means of a Civil Defence Committee which has set up working groups to consider problems of special technical difficulty or importance.

There also exists as part of the Civil Emergency Planning Office a Civil Defence Adviser whose task is to help and advise all NATO committees and NATO countries and to act as a sort of clearing house for the exchange of information. The office contains a film and film-strip library and a publications library, the contents of which are supplied by members of the Alliance and are available on loan.

(4) Hospitals

The object of the hospital service is to provide hospital facilities, doctors, nurses and so on, to deal with the casualties caused by air attack. The problem is a difficult one since in peacetime hospitals are normally situated in areas most likely to be bombed. They would have to be evacuated from such areas and transferred to temporary buildings or other hospitals situated in areas less likely to be attacked.

A special NATO Medical Committee has been set up to consider these problems, and works in close contact with SHAPE, since the whole hospitalisation problem is a joint civil and military responsibility.

A Medical Consultant's post has also been created on a temporary basis in the Civil Emergency Planning Office, to assist in this important work.

(5) Food

In order to survive, the population must be fed. The NATO Food and Agriculture Committee is concerned with seeing that all NATO countries have sufficient stocks of food to carry them over the survival period. The Committee is recommending that all Governments should initiate an official policy of encouraging the population to constitute household stocks as a vital measure of survival. It is obvious that, under fallout conditions, countless lives may be saved by the implementation of this policy. The Committee is also studying the protection of food-crops and livestocks from radiation, in order to give guidance to countries.

(6) Transportation

The maintenance of all forms of transport is of vital importance. The problems of shipping are dealt with by the Planning Board for Ocean Shipping; of inland transport and emergency port facilities, by the Planning Board for Inland Surface Transport; and of air, by the Civil Aviation Planning Committee.

The main object of these boards is to organize on an international basis the best use of the resources available to NATO and try and ensure the maintenance of at least minimum services under all foreseeable circumstances.

(7) Communications

If control is to be maintained, good communications are essential. In the event of thermo-nuclear war it is to be expected that telephone and telegraph systems will be badly disrupted. It is necessary, therefore, to ensure that wireless and broadcasting facilities are available in order to give instructions to the public and issue warnings about such matters as fallout from a thermo-nuclear explosion as well as to insure the minimum needs in all vital fields of civil emergency, both national and international. The special committee which is examining all the aspects of the problem of communications is the Civil Communications Planning Committee.

(8) Fuel Supplies

The arrangements necessary to ensure adequate fuel supplies for civil and military use in wartime are the responsibility of the Petroleum Planning Committee so far as petrol, oil and lubricants are concerned. Solid fuels have been dealt with by another Committee, which has now completed its task.

(9) Industry

During the recovery period after a nuclear attack, surviving industry will have to be put back into operation as soon as possible, in order to ensure the vital needs of countries. Vital installations that have been damaged will have to be repaired; the existing raw materials will have to be allocated by priorities. All this entails a sound national wartime organization. The Industrial Planning Committee studies these problems, in order to give guidance to the countries of the Alliance.

(10) Manpower

In war, the authorities responsible for labour will have calls for every category of manpower from all sectors of the national economy. Legislation and organization are needed for the control and allocation of such labour and priorities established. In particular, the best

utilisation of highly qualified scientific and technical skills has to be envisaged. These problems are studied by the Manpower Planning Committee, in order to give guidance to countries.

(11) International Supply Machinery

However difficult the situation, there will clearly be a need for some form of international wartime supply machinery not only to cover the survival period, but to help with the situation which will subsequently arise. This machinery will be concerned with both military and civilian instructions for this problem to be investigated. The International Staff, in collaboration with the Civil Emergency Co-ordinating Committee, is now elaborating plans for the setting up and the organization of an International Wartime Supply Agency, together with its necessary links with the military and shipping authorities. ▲

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Manpower in a Nuclear Emergency *(conclusion)*

Measures Organization, civil defence organizations, Emergency Health and Welfare Services, as well as target and other military headquarters in the various commands. Training on manpower topics has been provided on a regular basis at courses sponsored by the Federal and Provincial EMOs.

Essential records of the departments responsible for manpower have been identified, prepared and placed in safe storage at central and regional points.

The Department of Labour has, under continuing review, a register of scientific and technical personnel so that the best possible use could be made of their knowledge and skills in times of emergency. The research and analysis facilities of the Department are being brought to bear on such projects as manpower needs, essential activities, critical occupations and other aspects of manpower planning which fall particularly within the purview of the Department of Labour.

Readiness Plans for both the U.I.C. and the Department of Labour have been prepared in the light of the action that might be required prior to and during a state of emergency in accord with basic assumptions. These plans provide for the alerting, movement and manning of emergency facilities by officials having key emergency responsibilities. In addition, there is a training programme and all staff members have been provided with information concerning personal survival.

Conclusion

The information contained in the preceding paragraphs gives some appreciation of the complexity and extent of manpower problems that must be resolved. The primary focus has been placed on the assistance that would have to be given to survival operations. This phase of the emergency would require the immediate employment and deployment of great numbers of people. The Army alone has estimated a need for 385,000 civilian personnel to supplement their survival forces. Following survival operations, and in many cases anticipating them, would be the manpower needs for recovery. Here the need would be for more precise allocation by trades, skills and knowledge in order to accelerate the restoration of our productive and economic life.

It is not suggested that all the manpower problems that might be anticipated in the event of a nuclear emergency have been predetermined and resolved. No preparations can be complete in every detail and those being prepared are intentionally flexible to permit rapid adjustment to satisfy requirements as they occur. ▲

This attractive information kit containing two new pamphlets prepared by the Emergency Health Services Division of the Department of National Health and Welfare will be distributed shortly to some 2,000 Retail Pharmacies across Canada.

The programme will be carried out in cooperation with the Canadian Pharmaceutical Association and the Provincial Pharmaceutical Association and the Director of Emergency Health Services in each Province.

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